U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION II
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MEMORANDUM

TO: Grisell Diaz-Cota, Remedial Project Manager
ERRD/NJRB

FROM: Chuck Nace, Risk Assessor
ERRD/PSB

DATE: July 21, 2004

RE: Comments on the Remedial Investigation Technical Memorandum for the Diamond Head Oil Superfund Site in Kearny, NJ

Per your request, I have reviewed the Remedial Investigation Technical Memorandum for the Diamond Head Oil Superfund Site located in Kearny, NJ and my comments are provided below. As a general comment, this site appears to be located in the former floodplain of the Passaic River (i.e., Hackensack Meadowlands) and based upon the description of the site, it appears that the site is frequently submerged, and contains several types of wetland habitats, which calls into question the potential redevelopment for an office building. It is acknowledged that the habitat present at the site is in a degraded state, but it is also acknowledged that even degraded habitat can support viable populations.

Page 6-2, Selection of Exposure Pathways, second paragraph - This paragraph describes the selection of exposure pathways for the human health risk assessment. One potential exposure pathway, exposure to volatiles in indoor air, is not included in the text, however, it is included in Table 1 of Appendix I. This pathway should be included and discussed in the text. In addition, a table should be included in the Table 2 series that screens groundwater and/or soil gas, if available, for the vapor intrusion pathway.

Page 6-3, Ecological Risk Assessment, second paragraph - This paragraph describes the terrestrial species that may inhabit the site as being limited to opportunistic and/or urbanized species. Given that the site contains multiple habitat types, albeit degraded, that are generally not associated with urban areas (e.g., palustrine forested, palustrine, emergent, and open water

resources), this description of the types of wildlife that may be present is misleading. Especially given the different species have been observed on the site, including American woodcock and muskrat (documented in the Technical Memorandum) and nesting ring-necked pheasant (personal observation during the site visit).

Page 6-4, last paragraph - Related to the comment above, the last paragraph indicates that based on initial screening of the site data, further consideration of ecological receptors may be warranted, however it then states that the habitats on the site have been highly disturbed by past activities and provide only very limited viable habitat for ecological receptors. Based on the location of the site (i.e., within the Meadowlands area) and the acknowledgment that former viable habitats were highly disturbed by site-related activities, this site may present Natural Resource Damage Assessment issues that should be forwarded to the Trustees through the Biological Technical Assistance Group (BTAG).

Appendix J - Screening-level and Step 3 Ecological Risk Assessment

Page 2-3, next to last paragraph - As indicated above, defining the potential wildlife that could be present at the site does not seem to fit the description of "urban-adapted", especially with the report of observing American woodcock and muskrat on the site, as these species are typically not found in highly urbanized areas unless sufficient habitat is present. The text further identifies several species of birds that are likely to be present, including European starling, rock dove, house finch, and house sparrow, however these species do not represent the only likely avian species that may be present at the site. Given that the site contains numerous wetland habitats, ranging from open water to forested, combined with the fact that this area is part of the eastern- seaboard flyway and is located within the Hackensack Meadowlands, the potential list of avian species that could be present would include many more species, with many not fitting the description of "urban-adapted". A quick search on the internet to find avian species that use reed wetlands, defined as *Phragmites* stands, found at least 33 species of nesting birds and additional species that use the wetlands for foraging or roosting (see http://www.njaudubon.org/Conservation/opinions/05-012.html).

Additionally, a report entitled "Hackensack Meadowlands, New Jersey, Biodiversity: A review and synthesis" states "*The Meadowlands are significant for concentrations of federal trust species including waterfowl, wading birds, shorebirds, raptors, anadromous and estuarine fishes, and diamondback terrapin (Day et al. 1999). The most species-rich vertebrate groups in the Meadowlands are fishes and birds. Eighty-eight Species of Special Emphasis (U.S. Fish and Wildlife Service 1997) occur in the Meadowlands, primarily fishes and birds. Twenty state-listed endangered or threatened species occur there (Table 4). Forty-two species considered rare in the urban core of the New York metropolitan region, and 49 species rare in the New York Bight ecosystem, are found in the Meadowlands (Day et al. 1999).*" (see http://www.nynjbaykeeper.org/photo/ht%20alert%20-%20kiviat%20report.pdf).

This type of information should be included in the Environmental Setting - Site Overview and Surrounding Land Use section.

Page 2-4, Rare, Threatened, and Endangered Species, first paragraph - This paragraph indicates that a rookery of coastal heron species is located within 1/4 mile of the site. Additional information regarding this rookery should be included with specific details, if available, on the species that use this rookery and the likelihood of herons from this rookery foraging on the site.

Page 2-5, Surface Water/Sediment - This paragraph describes the flow of surface water on the site and indicates that standing water in depressed areas and drainages would remain only after large storm events. However, this contrasts with the description on page 1-2 of the Remedial Investigation Technical Memorandum report which states that during the Phase 1 RI activities there was standing water, mud and soft ground present over all of the site other than the landfill and the strip of land north of the landfill along Harrison Avenue. This also calls into question if the wetlands on the site may be growing in size or if the wetlands were delineated during dry conditions and actually may encompass more of the site.

Page 2-7, Receptors and Endpoints for Evaluation - Based on observations made during an initial site visit, it appears that there is one ecological receptor population that is not considered. While walking through the site during the site visit, I found an owl pellet towards the center of the site by the larger wetland area. This indicates that predatory birds (i.e., avian carnivore) use the site as a roosting area and potentially as a foraging area. This receptor type, as well as its prey type should be added for evaluation.

Page 2-9, Survival, Growth, and Reproduction of Water Column-dwelling Aquatic Communities - Please add amphibians and reptiles to the description of the animals groups that may comprise the aquatic community at the site, as turtles were reported as being observed and frogs were observed during the initial site visit.

Page 3-5, Summary of Risk Calculations and Risk Conclusions - It is unclear to me if conclusions can be drawn based on the information provided in the risk assessment. The core question, to me, when evaluating ecological risk at a site is to determine the receptors that are currently using the site or potentially could use the site. There are a few species identified that were observed while working on the site, however, it does not appear that there was a directed effort, such as performing a census in the early morning or evening to record species (i.e., avian, mammalian, amphibian, and reptilian) abundance and frequency, conducting a few simple seine runs through the drainage area to identify the aquatic receptors, to develop a list of ecological receptors that are using the site. It seems as though the quality of the habitat is based more upon visual interpretation rather than on the actual use of the site by ecological receptors. During a very brief site visit conducted in the late morning hours, a variety of wildlife species that are not commonly observed in the middle of an urban environment or even in a backyard environment were either directly seen or indirectly documented through droppings. I will concur that the site contains degraded habitat, however, it appears that there is a diversity of wildlife present at the site (e.g., American woodcock, turtles, deer, muskrat, ring-necked pheasant with young, owl) which is being casually dismissed as "urban-adapted". It is recommended to better characterize the species that are present at the site and refine the ecological risk assessment to better reflect the actual use of the degraded habitats.

For example on Page 3-6, in the second paragraph, it is indicated that few other aquatic species were observed in the drainage areas. Typically, aquatic species are not readily observable unless some sort of effort is exerted, such as making several runs with a seine through the water body, setting traps, conducting underwater censuses, or electroshocking, to name a few. It does not appear that any activity was conducted to identify aquatic receptors aside from visual observation, thus the conclusion that there were few receptors present because they were not visually observed is not convincing.

Page 3-7 - The text on this page indicates that if groundwater were to discharge to the surface that it would be diluted. However, on page 3-6 the drainage areas are identified as being " stagnant, and have very little flow". Thus if a potential source of the water in the drainage areas were to be discharging groundwater, dilution would not likely have a significant effect.

Page 5-1, last bullet on page - Please add amphibians and reptiles to the list of animal groups that would rely on soil invertebrates as a prey base.

Page 5-2, first paragraph after bullets - As stated above, the recommendation that "further evaluation of ecological risks may not be warranted" based upon qualification of the habitat being of poor quality may not be appropriate given the apparent diversity of ecological receptors identified on the site.

Page 5-2, last paragraph - The conclusion that herbivorous mammals should not be included for further evaluation may not be valid if an avian carnivore (i.e., owl) is included as an ecological receptor as they prey on herbivorous mammals.

cc: Vince Pitruzzello, PSB
John Prince, NJRB
Michael Sivak, TST
Mindy Pensak, BTAG